APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,013	09/15/2003	Paul S. Diefenbaugh	42P17653	2750

8791   7590   02/08/2007
BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER
SIM, YONG H

ART UNIT	PAPER NUMBER
2629	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/08/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-54* is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 November 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some *   c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Drawings

1.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show

every feature of the invention specified in the claims. Therefore, the "register" must be

shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in

reply to the Office action to avoid abandonment of the application. Any amended

replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

3.   **Claim 9 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

As to claims 9 and 12, the claims contain idiomatical errors, which make them difficult to clearly define the scope. Note the underlined phrase.

Re claim 9, the apparatus of claim 1 further comprising a backlight control agent communicatively coupled with the set of registers and the image brightness agent, the backlight control agent to control backlight intensity.

For the purpose of art rejection, the claims will be construed as stated below,

9. The apparatus of claim 1 further comprising a backlight control agent communicatively coupled with the set of registers and the image brightness agent to control backlight intensity.

12. The apparatus of claim 11 further comprising a backlight control agent communicatively coupled with the set of registers and the image brightness agent to control backlight intensity in response to modifications of the color look-up table.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   **Claim 1, 5, 7 – 8,13, 17 –18, 20, 24, and 31 are rejected under 35**

U.S.C. 102(b) as being anticipated by Nenonen (US 6,148,103).

Re claim 1, Nenonen teaches An apparatus comprising: a set of registers

corresponding to computed brightness values to store data indicating a number of pixels

of an image having respective computed brightness values (Col. 1, lines 15 – 16; "A

histogram is the distribution of the brightness values of a picture, and the number of the

brightness values are grouped into classes." The histogram is stored in "42, memory"

(Fig. 5). It is inherent that the brightness values are stored in a set of registers in order

to be grouped into classes in memory/registers.) each register having an associated

saturation threshold value (Col. 2, lines 1 – 5; "a maximum amplification limit/threshold

that must not be surpassed by the histogram peaks."); and an image brightness agent

(Col. 7, lines 29 – 34; "The system according to the invention can be realized in many

different ways, for example by means of a custom designed application specific

integrated circuit or in a programmed fashion.") communicatively coupled with the set of

registers to determine whether a register is saturated and to redistribute computed

brightness values to one or more non-saturated registers (Col. 2, lines 1 – 5; "The cut-

out values must be distributed back to the histogram in order to form the mapping

function correctly.").

Re claim 5, Nenonen teaches the apparatus of claim 1 wherein one or more of

the saturation threshold values ("Cut-out values," Col. 2, line 5) comprises a largest

number ("peak values," Col. 2, line 3) to be stored by the associated register.

Re claim 7, Nenonen teaches the apparatus of claim 1 wherein the image

brightness agent comprises a processor (Col. 7, lines 29 – 33; "The system according to

the invention can be realized in many different ways, for example by means of a digital

signal processor.") executing sequences of instructions (Fig. 3).

Re claim 8, Nenonen teaches the apparatus of claim 1 wherein the image

brightness agent comprises control circuitry (Col. 7, lines 29 – 33; "by means of a

custom designed application specific integrated circuit.") communicatively coupled with

the set of registers.

The limitations of claim 13 are substantially similar to the limitations of claim 1.

Therefore it has been analyzed and rejected similar to the rejection of claim 1. Claim 13

is a corresponding method claim to the apparatus claim 1.

The limitations of claim 17 are substantially similar to the limitations of claim 5. Therefore it has been analyzed and rejected similar to the rejection of claim 5.

The limitations of claim 18 are substantially similar to the limitations of claim 6. Therefore it has been analyzed and rejected similar to the rejection of claim 6.

Re claim 20, Nenonen teaches an article comprising a machine-readable medium having stored thereon instruction that, when executed by one or more processors, cause the one or more processors (Col. 7, lines 29 – 33; "The system according to the invention can be realized in many different ways, for example by means of a custom designed application specific integrated circuit or a control program of a digital signal process.) to: store, in a plurality of registers, an indication of a number of pixels in an image having a computed brightness value corresponding to the respective registers; and redistribute a subset of computed brightness values corresponding to one or more registers if the computed brightness value for the register exceeds a threshold value (See rejection to claim 1).

The limitations of claim 24 are substantially similar to the limitations of claim 5. Therefore it has been analyzed and rejected similar to the rejection of claim 5.

The limitations of claim 31 are substantially similar to the limitations of claim 5.

Therefore it has been analyzed and rejected similar to the rejection of claim 5.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
       obviousness or nonobviousness.

5.   **Claims 2 – 4 and 9 – 12, 14 – 16, 19, 21 – 23, 26, 28 – 30, and 33 - 54 are**

rejected under 35 U.S.C. 103(a) as being unpatentable over Nenonen (US

6,148,103) in view of Helms (US 5,760,760).

Re claim 2, Nenonen teaches the apparatus of claim 1, but fails to teach the

color look-up table that modifies based on the computed brightness values.

However, Helms teaches a look-up table that modifies based on the input

ambient light value/brightness value. (Helms: Col. 3, lines 60 – 65).

Therefore, taking the combined teachings of Nenonen and Helms, as a whole, it

would have been obvious to a person having ordinary skill in the art to incorporate the

look-up table as taught by Helms into the apparatus of claim 1 as taught by Nenonen to

obtain an apparatus with a look-up table that contains certain computed brightness

values which quickly and accurately modifies the brightness of an LCD based on the

ambient lighting conditions of the environment in which the LCD is being operated.

(Helms: Abstract).

Re claim 3, the combined teaching of Nenonen and Helms teach the apparatus

of claim 2 wherein the registers store brightness histogram values (Nenonen: Col. 1,

lines 15 – 16; "A histogram is the distribution of the <u>brightness values</u> of a picture, and

<u>the number</u> of the brightness values are grouped into classes." The histogram is stored

in "42, memory" (Fig. 5). It is inherent that the brightness values are stored in a set of

registers in order to be grouped into classes in memory/registers.)

Re claim 4, the combined teachings of Nenonen and Helms teach the apparatus

of claim 2, but the teachings as discussed in claim 2 fail to further describe the

apparatus comprising a backlight control agent communicatively coupled with the image brightness agent, the backlight control agent to modify backlight brightness based on modifications to the color look-up table.

However, Helms further teaches an apparatus wherein the backlight is modified based on the modification of the lookup table (Helms: Col. 3, line 60 – Col 4, line 5. As for the backlight control agent, the means for controlling or modifying is required to modify the backlight.).

Therefore, taking the combined teachings of Nenonen and Helms, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the backlight brightness modification as taught by Helms into the apparatus of claim 2 as taught by Nenonen and Helms, as a whole, to obtain an apparatus with a look-up table that contains certain computed brightness values which quickly and accurately modifies the brightness of an LCD based on the ambient lighting conditions of the environment in which the LCD is being operated. (Helms: Abstract).

The limitations of claim 9 are substantially similar to the limitations of claim 4. Therefore it has been analyzed and rejected similar to the rejection of claim 4.

Re claim 10, the combined teachings of Nenonen and Helms teaches the apparatus of claim 9, but fails to further described the apparatus comprising an ambient light sensor coupled with the image brightness agent to generate an indication of ambient light level.

However, Helms further teaches an apparatus wherein a <u>photodetector</u> is located proximate the front of the LCD to generate brightness control circuitry signal <u>indicative</u> of <u>ambient lighting conditions</u> (Abstract).

Therefore, taking the combined teachings of Nenonen and Helms, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the photodetector as taught by Helms into the apparatus of claim 9 as taught by Nenonen and Helms, as a whole, to obtain an apparatus with computed brightness values which automatically adjusts the brightness of an LCD based on the ambient lighting conditions of the environment, where the LCD is being operated, by modifying the backlight brightness according to the look-up table to increase battery run-time. (Helms: Abstract, Col. 2, lines 39 - 42).

Re claim 11, the combined teachings of Nenonen and Helms teach the apparatus of claim 9, but fail to disclose the image brightness agent that modifies a color look-up table based on the indication of ambient light level.

However, Helms further teaches an apparatus wherein a color look-up table is modified based on the indication of ambient light level (Helms: Col. 3, lines 51 – 65).

Therefore, taking the combined teachings of Nenonen and Helms, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the photodetector as taught by Helms into the apparatus of claim 9 as taught by Nenonen and Helms, as a whole, to obtain an apparatus with a photodetector that computes brightness values to automatically adjust the brightness of an LCD based on the

ambient lighting conditions of the environment, where the LCD is being operated, to modify the backlight brightness according to the look-up table to increase battery run-time. (Helms: Abstract, Col. 2, lines 39 - 42).

The limitations of claim 12 are substantially similar to the limitations of claim 4. Therefore it has been analyzed and rejected similar to the rejection of claim 4.

The limitations of claim 14 are substantially similar to the limitations of claim 2. Therefore it has been analyzed and rejected similar to the rejection of claim 2.

The limitations of claim 15 are substantially similar to the limitations of claim 4. Therefore it has been analyzed and rejected similar to the rejection of claim 4.

The limitations of claim 16 are substantially similar to the limitations of claim 3. Therefore it has been analyzed and rejected similar to the rejection of claim 3.

The limitations of claim 19 are substantially similar to the limitations of claims 10 - 12. Therefore it has been analyzed and rejected similar to the rejection of claims 10 - 12.

The limitations of claim 21 are substantially similar to the limitations of claim 2. Therefore it has been analyzed and rejected similar to the rejection of claim 2.

The limitations of claim 22 are substantially similar to the limitations of claim 4.

Therefore it has been analyzed and rejected similar to the rejection of claim 4.

The limitations of claim 23 are substantially similar to the limitations of claim 3.

Therefore it has been analyzed and rejected similar to the rejection of claim 3.

The limitations of claim 26 are substantially similar to the limitations of claim 10 -

12. Therefore it has been analyzed and rejected similar to the rejection of claim 10 - 12.

The limitations of claim 28 are substantially similar to the limitations of claim 2.

Therefore it has been analyzed and rejected similar to the rejection of claim 2.

The limitations of claim 29 are substantially similar to the limitations of claim 3.

Therefore it has been analyzed and rejected similar to the rejection of claim 3.

The limitations of claim 30 are substantially similar to the limitations of claim 4.

Therefore it has been analyzed and rejected similar to the rejection of claim 4.

The limitations of claim 33 are substantially similar to the limitations of claim 9.

Therefore it has been analyzed and rejected similar to the rejection of claim 9.

The limitations of claim 34 are substantially similar to the limitations of claim 10. Therefore it has been analyzed and rejected similar to the rejection of claim 10.

The limitations of claim 35 are substantially similar to the limitations of claim 11. Therefore it has been analyzed and rejected similar to the rejection of claim 11.

The limitations of claim 36 are substantially similar to the limitations of claim 12. Therefore it has been analyzed and rejected similar to the rejection of claim 12.

The limitations of claim 37 are substantially similar to the limitations of claims 3 and 4. Therefore it has been analyzed and rejected similar to the rejection of claims 3 and 4. With respect to said "image brightness profile" as discussed in the above 112-2nd rejection, claim 3 discusses the brightness histogram. The image brightness profile is equivalent to the brightness histogram, which is comprised of computed brightness values.

The limitations of claim 38 are substantially similar to the limitations of claims 1 and 3. Therefore it has been analyzed and rejected similar to the rejection of claims 1 and 3.

The limitations of claim 39 are substantially similar to the limitations of claim 1.

Therefore it has been analyzed and rejected similar to the rejection of claim 1.

The limitations of claim 40 are substantially similar to the limitations of claim 1.

Therefore it has been analyzed and rejected similar to the rejection of claim 1.

The limitations of claim 41 are substantially similar to the limitations of claim 2.

Therefore it has been analyzed and rejected similar to the rejection of claim 2.

Re claim 42, the combined teachings of Nenonen and Helms teach an apparatus

comprising: an image brightness agent to analyze pixels of an image to be displayed on

a display device having an adjustable backlight source and to generate an image

brightness profile (See rejection to claim 37); and a backlight control circuit (See "204,

Brightness control circuitry," Fig. 2), coupled with the image brightness agent to

dynamically adjust an intensity of light provided by the adjustable backlight source

based on the image brightness profile (See rejection to claim 37).

Re claim 43, the combined teachings of Nenonen and Helms teach the

apparatus of claim 42 further comprising a display device including the adjustable

backlight source, wherein the adjustable backlight source is coupled with the backlight

control circuit to provide the intensity of light corresponding to signals received from the

backlight control circuit (See rejection to claim 4, Helms: Col. 3, line 60 – Col 4, line 5.

Also see the "204, brightness control circuit"/backlight control circuit in Fig. 2.).

The limitations of claim 44 are substantially similar to the limitations of claim 38.

Therefore it has been analyzed and rejected similar to the rejection of claim 38.

The limitations of claim 45 are substantially similar to the limitations of claim 39.

Therefore it has been analyzed and rejected similar to the rejection of claim 39.

The limitations of claim 46 are substantially similar to the limitations of claim 40.

Therefore it has been analyzed and rejected similar to the rejection of claim 40.

Re claim 47, the combined teachings of Nenonen and Helms teach an article

comprising a computer-readable medium having stored thereon instructions that, when

executed, cause one or more processing devices to (Nenonen: Col. 7, lines 29 – 33;

"The system according to the invention can be realized in many different ways, for

example by means of a custom designed application specific integrated circuit or a

control program of a digital signal process.): determine an image brightness profile for

an image to be displayed on a display device having an adjustable backlight source;

and modify an intensity of light provided by the adjustable backlight source based on the

brightness profile (See rejection to claim 37).

The limitations of claim 48 are substantially similar to the limitations of claim 38.

Therefore it has been analyzed and rejected similar to the rejection of claim 38.

The limitations of claim 49 are substantially similar to the limitations of claim 39.

Therefore it has been analyzed and rejected similar to the rejection of claim 39.

The limitations of claim 50 are substantially similar to the limitations of claim 40.

Therefore it has been analyzed and rejected similar to the rejection of claim 40.

The limitations of claim 51 are substantially similar to the limitations of claim 41.

Therefore it has been analyzed and rejected similar to the rejection of claim 41.

The limitations of claim 52 are substantially similar to the limitations of claims 27

and 42. Therefore it has been analyzed and rejected similar to the rejection of claims

27 and 42.

The limitations of claim 53 are substantially similar to the limitations of claim 44.

Therefore it has been analyzed and rejected similar to the rejection of claim 44.

The limitations of claim 54 are substantially similar to the limitations of claim 49

and 50. Therefore it has been analyzed and rejected similar to the rejection of claim 49

and 50.

6.   **Claims 6, 25, 27 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nenonen (US 6,148,103).**

Re claim 6, Nenonen teaches the apparatus of claim 1, but fails to explicitly teach the saturation threshold values comprising number less than a largest number to be stored by the associated register.

However, Nenonen teaches moving the values that are above the threshold value, which suggests that the threshold value should be equal to or less than the largest number to be stored.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the saturation threshold values comprising number less than an largest number to be stored by the associated register to optimally distribute the values among registers.

Re claim 27, Nenonen teaches a system comprising: a set of registers corresponding to computed brightness values to store data indicating a number of pixels of an image having respective computed brightness values (Col. 1, lines 15 – 16; "A histogram is the distribution of the brightness values of a picture, and the number of the brightness values are grouped into classes." *It is inherent that the brightness values are stored in a set of registers in order to be grouped into classes.) each register having an associated saturation threshold value (Col. 2, lines 1 – 5; "a maximum amplification

limit/threshold that must not be surpassed by the histogram peaks."); and an image

brightness agent (Col. 7, lines 29 – 34; "The system according to the invention can be

realized in many different ways, for example by means of a custom designed application

specific integrated circuit or in a programmed fashion.") communicatively coupled with

the set of registers to determine whether a register is saturated and to redistribute

computed brightness values to one or more non-saturated registers (Col. 2, lines 1 – 5;

"The cut-out values must be distributed back to the histogram in order to form the

mapping function correctly.").

But fails to explicitly disclose a flat panel display device coupled to display the

image.

However, Examiner takes official notice that it is well known in the art to use a flat

panel display device to display the image for television pictures as discussed by

Nenonen in Col. 1, lines 6 – 10.

Therefore, it would have been obvious to use a flat panel display device for

improved mobility and conservation of space.

The limitations of claim 25 are substantially similar to the limitations of claim 6.

Therefore it has been analyzed and rejected similar to the rejection of claim 6.

The limitations of claim 32 are substantially similar to the limitations of claim 6.

Therefore it has been analyzed and rejected similar to the rejection of claim 6.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong Sim whose telephone number is (571) 270-1189. The examiner can normally be reached on Monday - Friday (Alternate Fridays off) 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

1/25/2007

AMR A. AWAD
SUPERVISORY PATENT EXAMINER